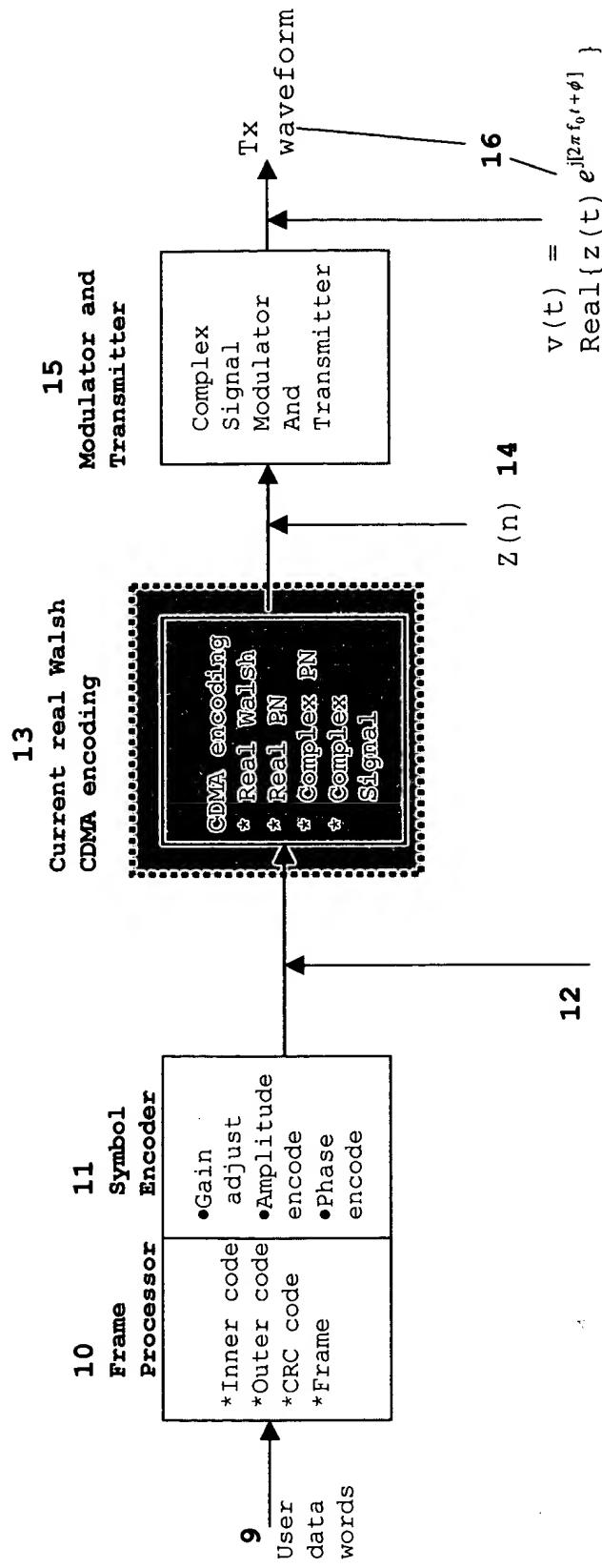




FIG. 1A CDMA Transmitter: Block Diagram



User data symbols

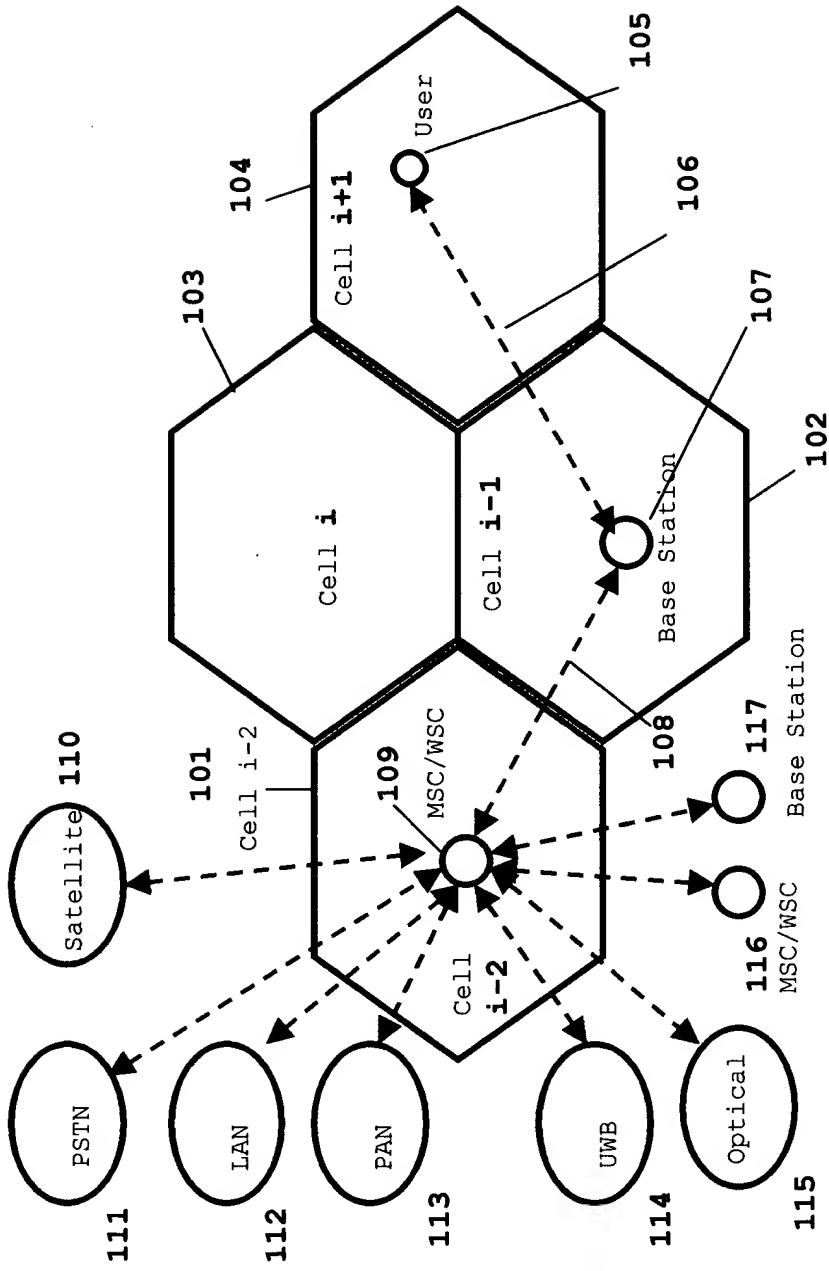
$$= \{Z(u)\} = R(u_R) + jI(u_I)\}$$

For complex data symbols $u = u_R = u_I$

For real data symbols $u = \text{index for}$
counting the user pairs (u_R, u_I)



FIG. 1B CDMA Transmitter: Cellular Application



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FIG. 1C CDMA Transmitter: Cellular Implementation

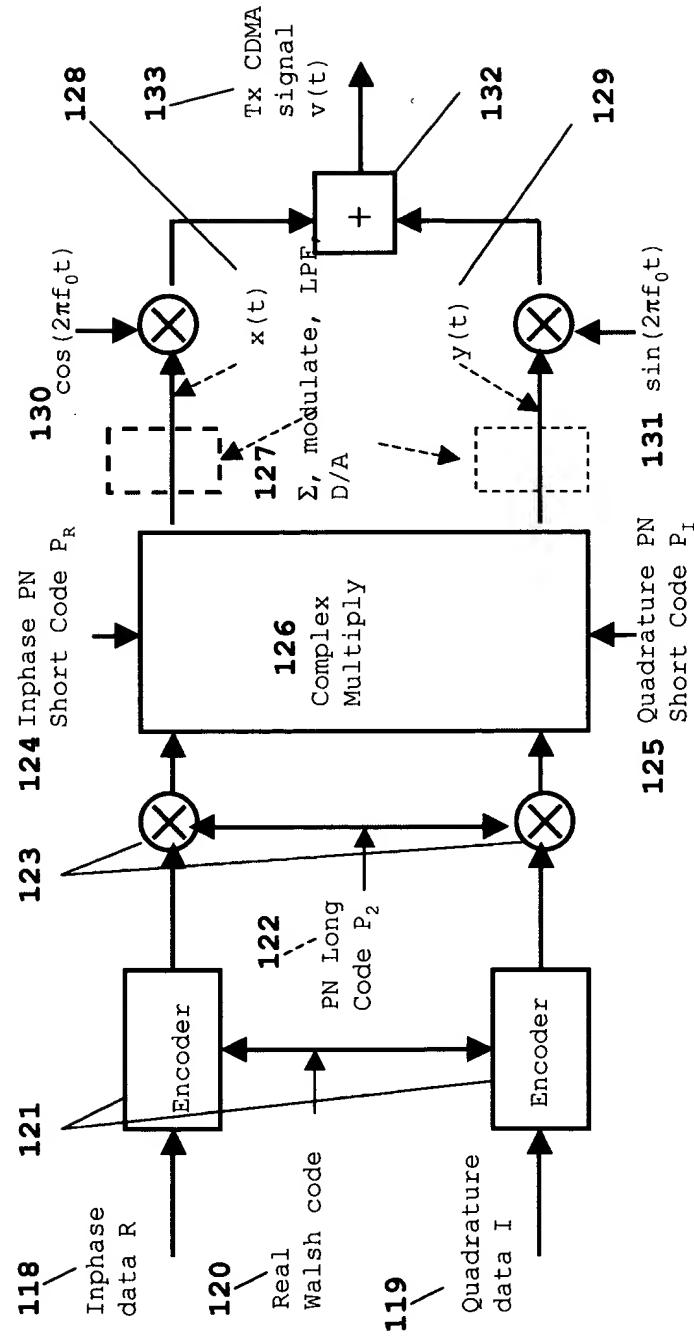




FIG. 2 Real Walsh CDMA Encoding Implementation

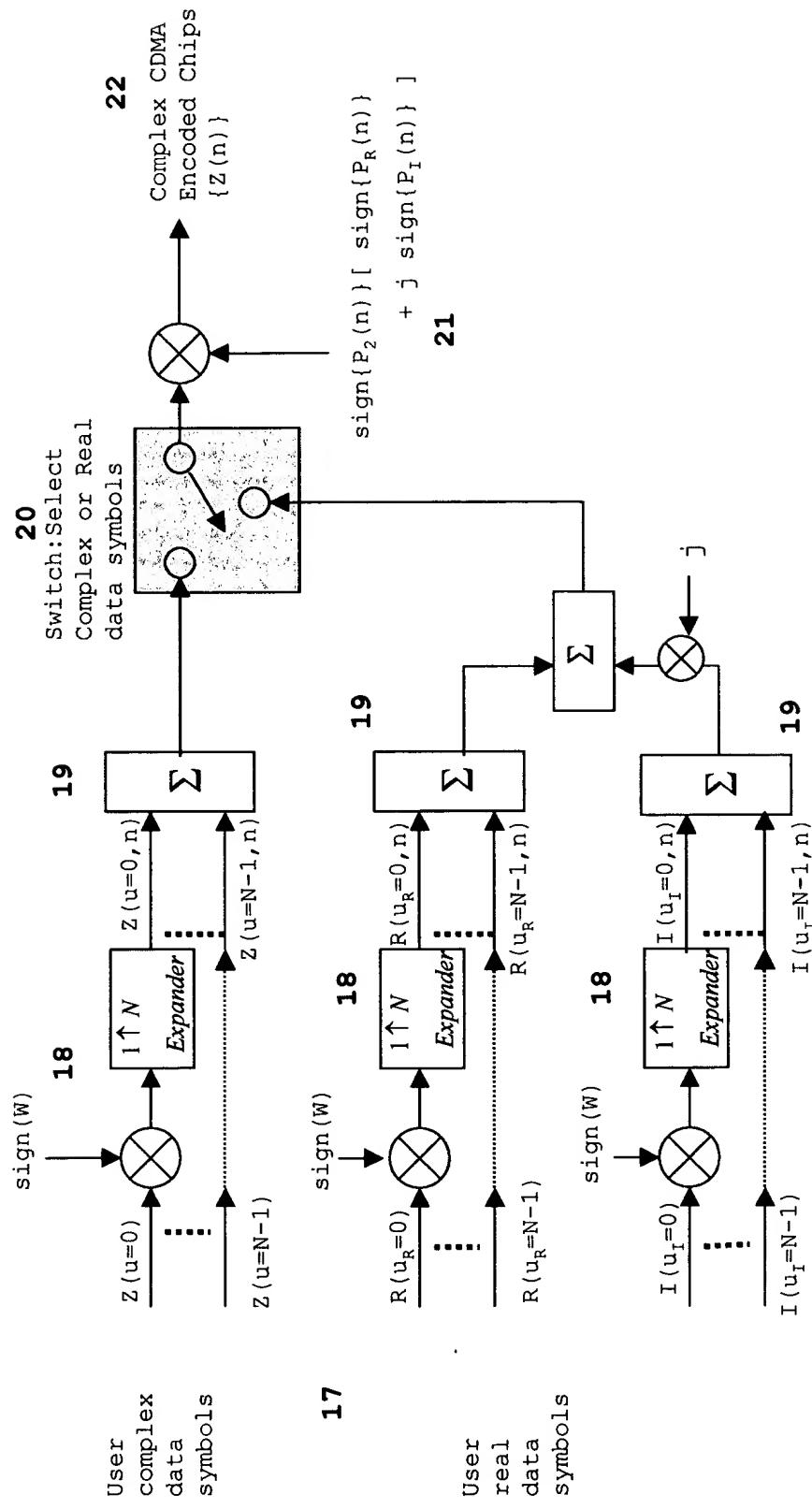
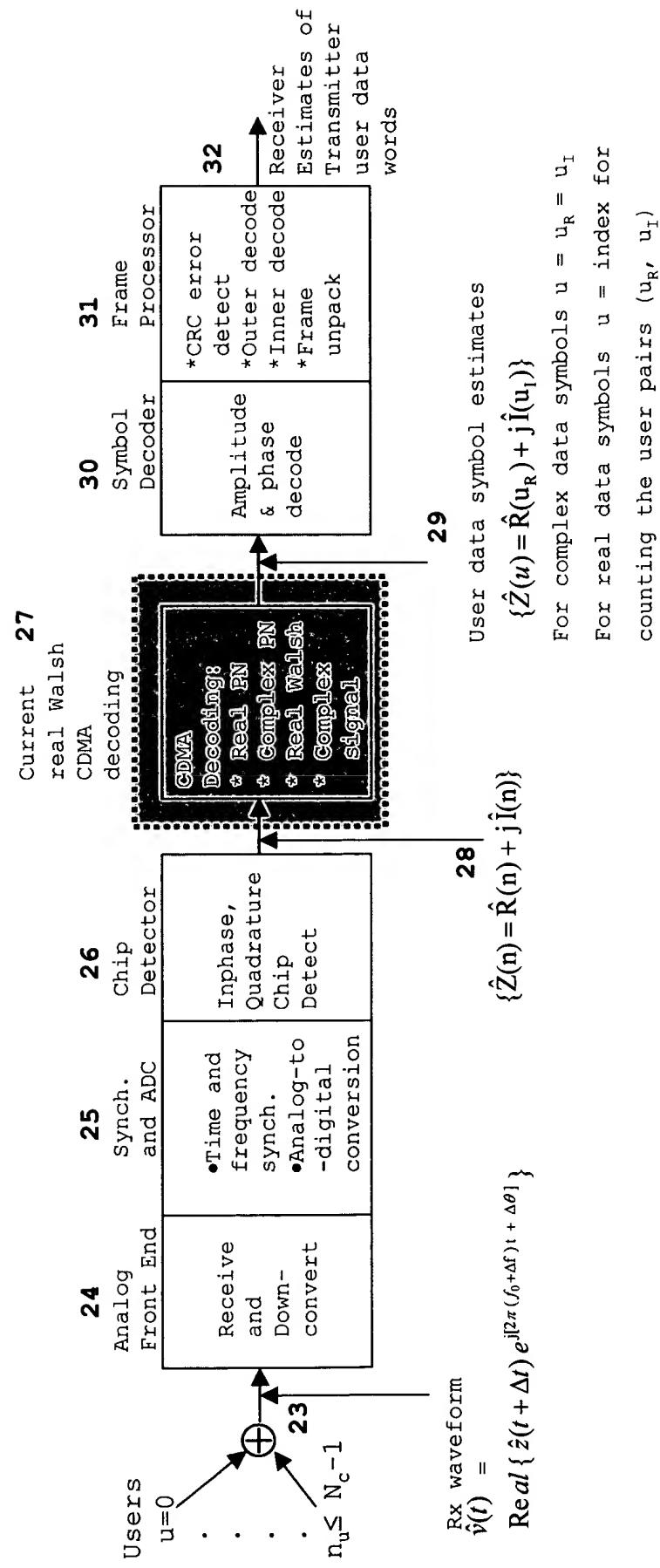




FIG. 3A CDMA Receiver: Block Diagram



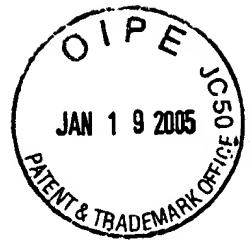


FIG. 3B CDMA Receiver: Cellular Implementation

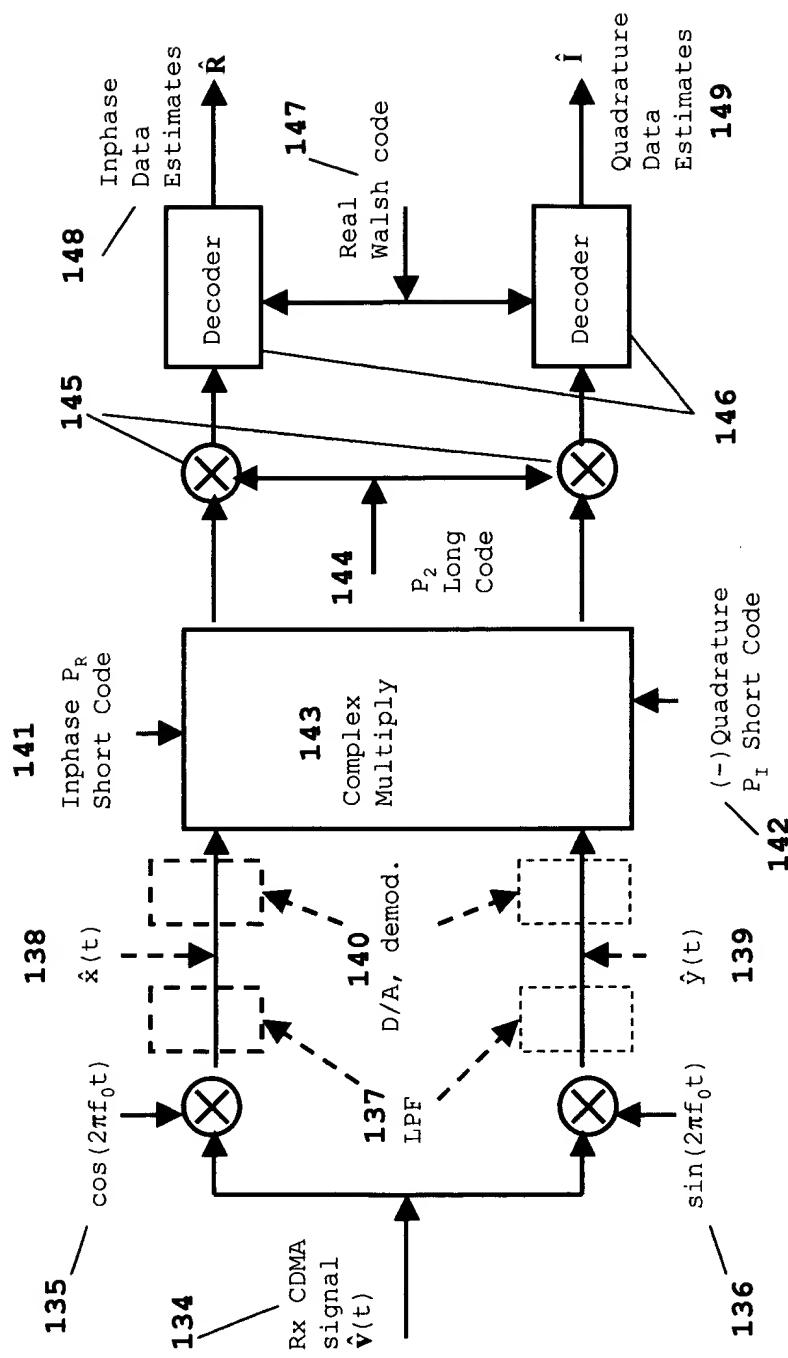
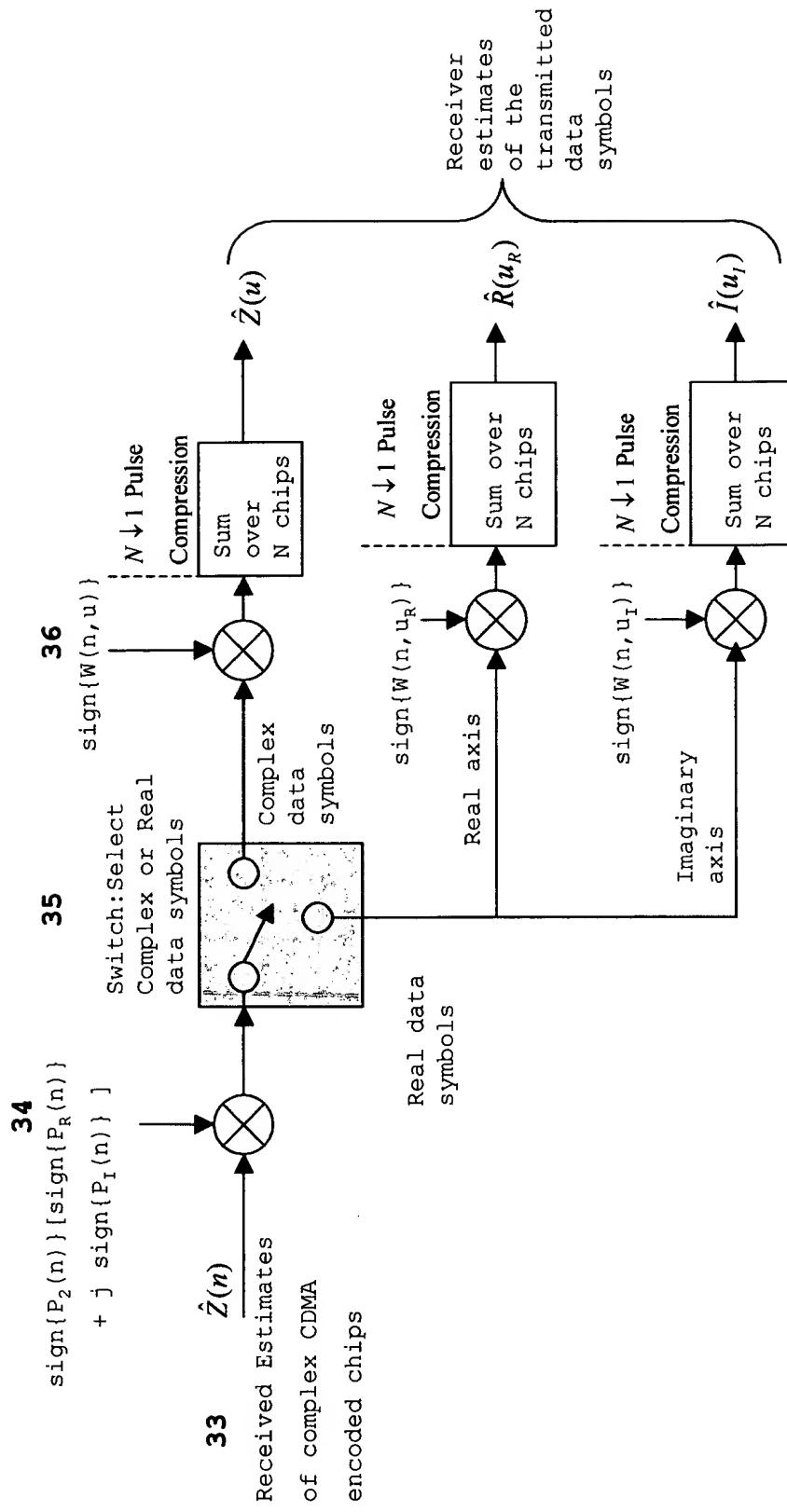




FIG. 4 Real Walsh CDMA Decoding Implementation





**FIG. 5 Correlation of Fourier Codes
with DFT Codes for N=32**

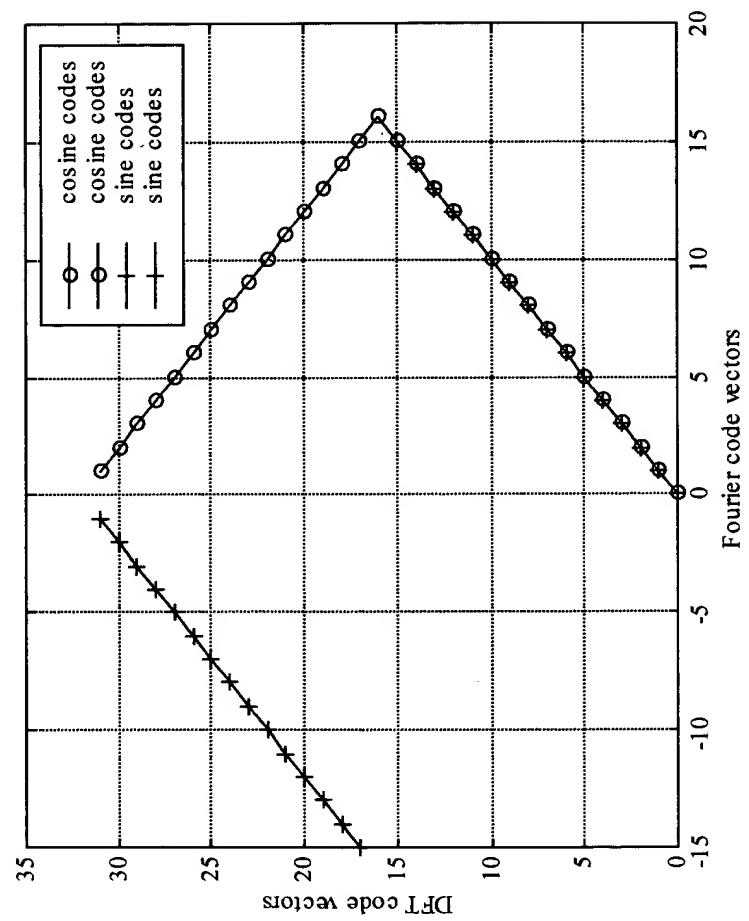




FIG. 6A Hybrid Walsh: CDMA Encoding Implementation

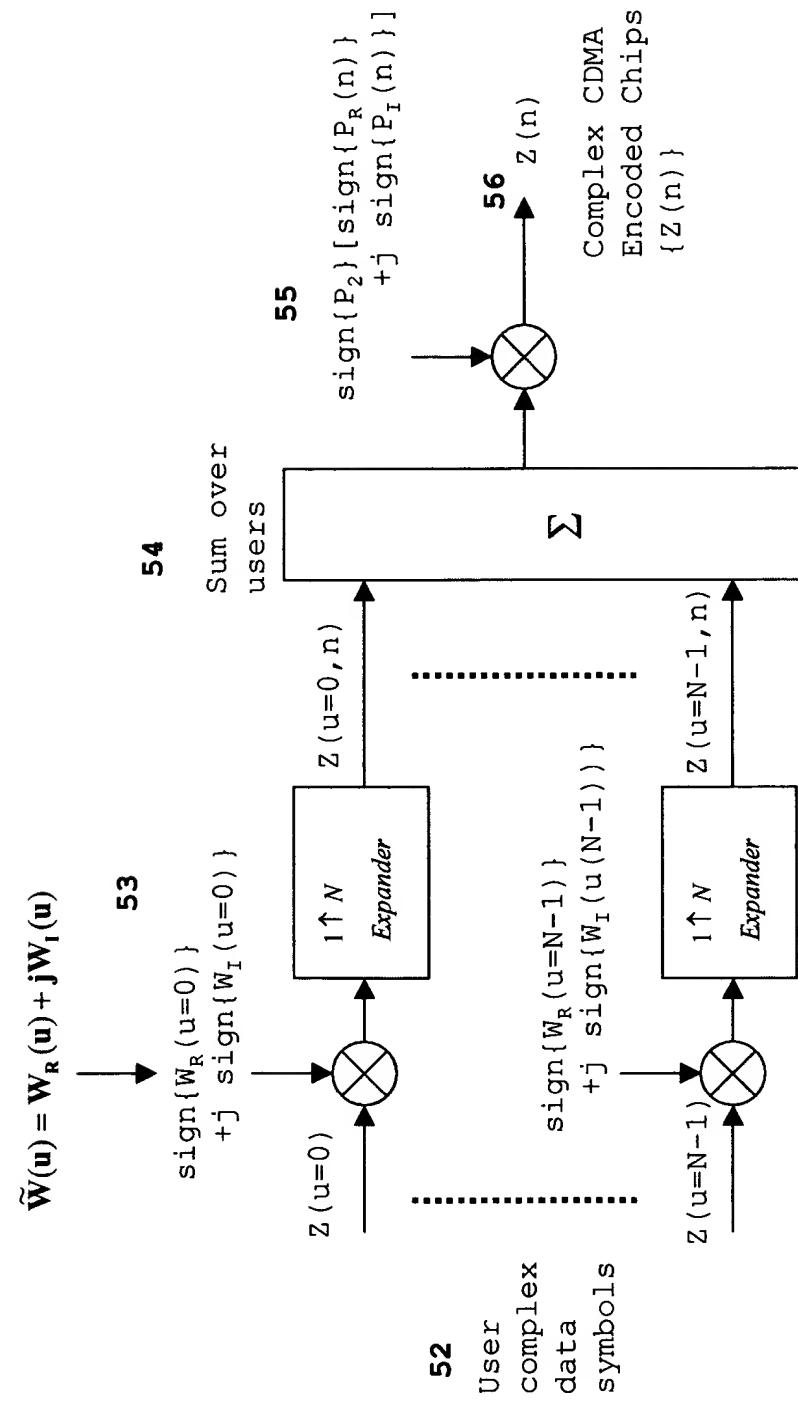




FIG. 6B Hybrid Walsh: Implementation Algorithm

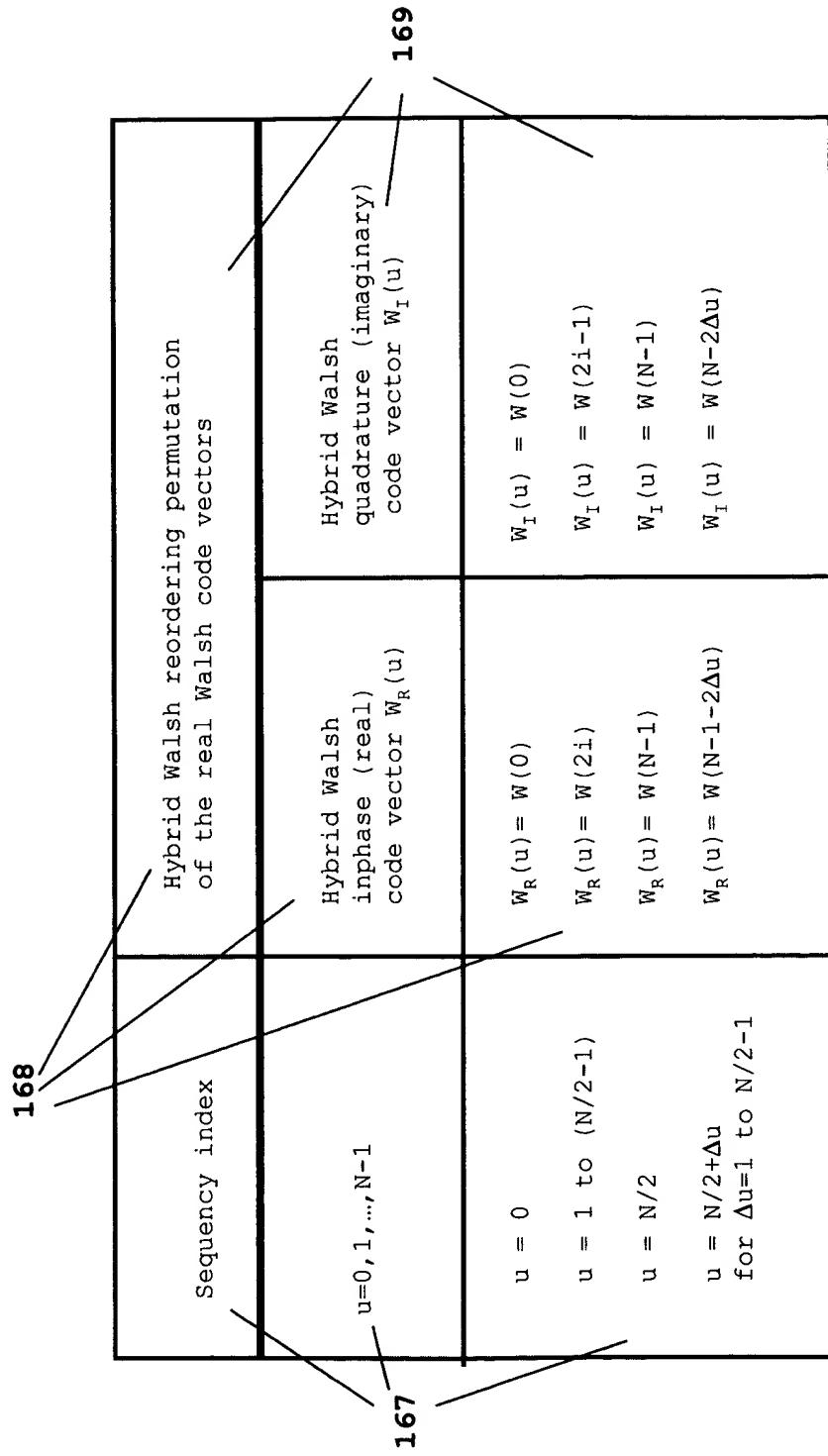




FIG. 6C Hybrid Walsh: Implementation Algorithm Based on Even and Odd Real Walsh Codes

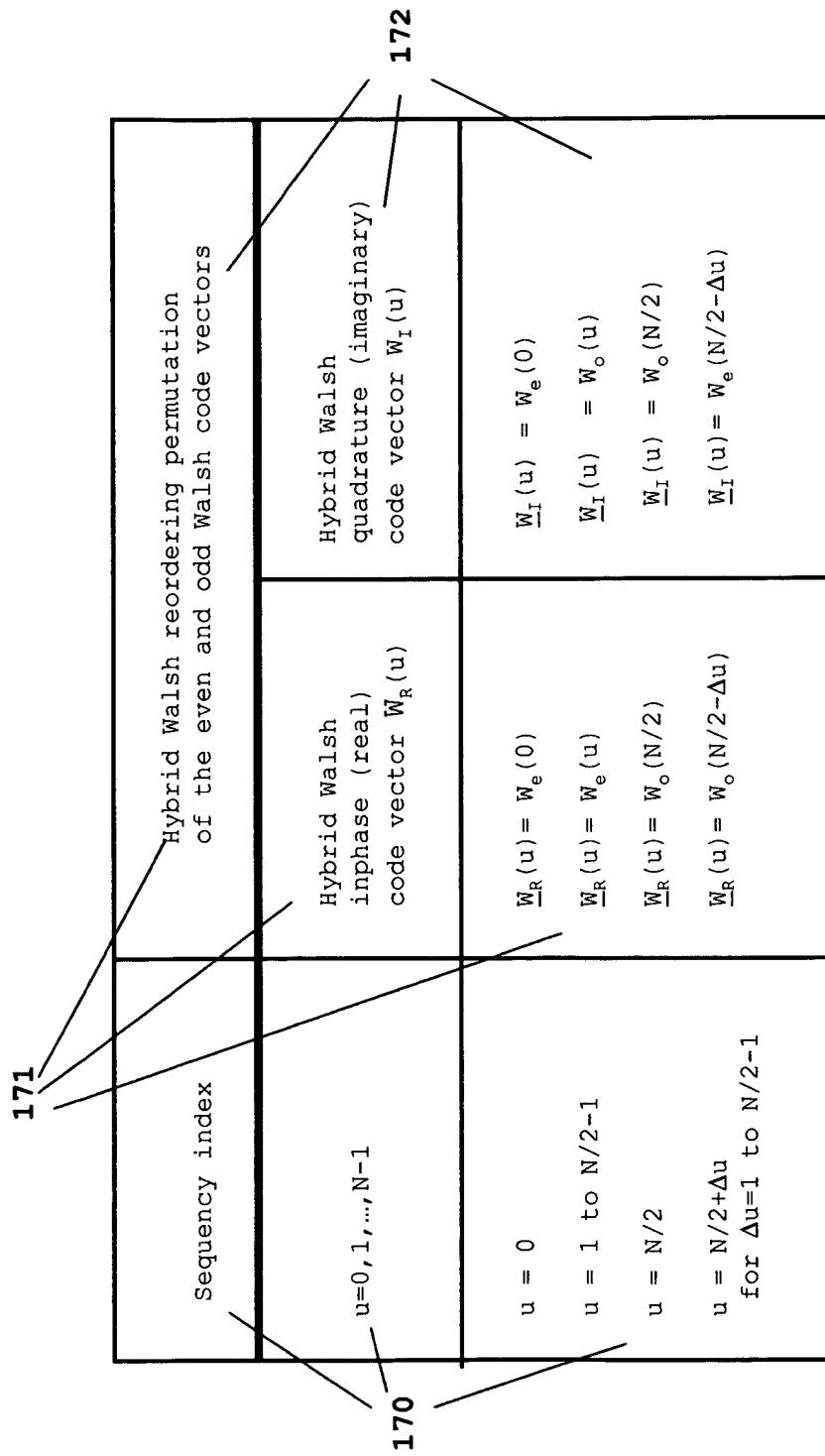




FIG. 6D Hybrid Walsh: Cellular Transmitter Implementation

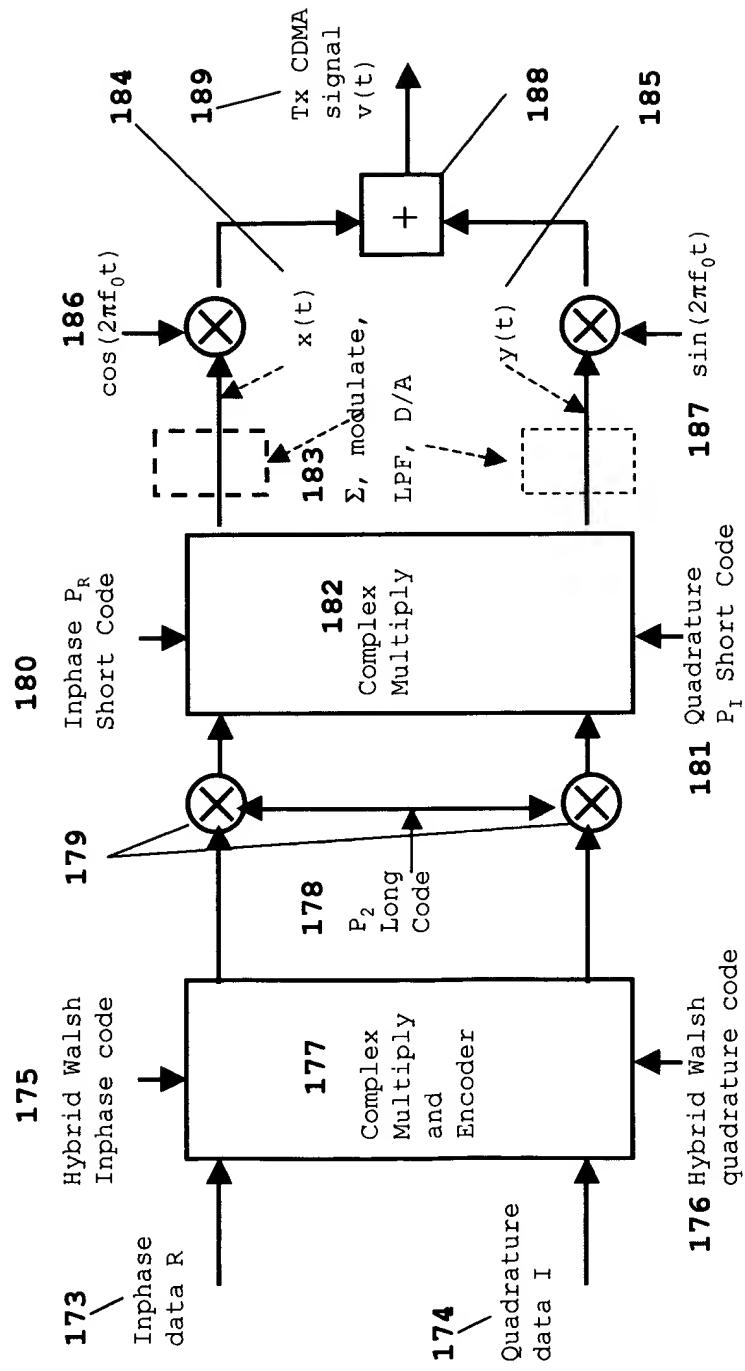




FIG. 7A Hybrid Walsh CDMA Decoding Implementation

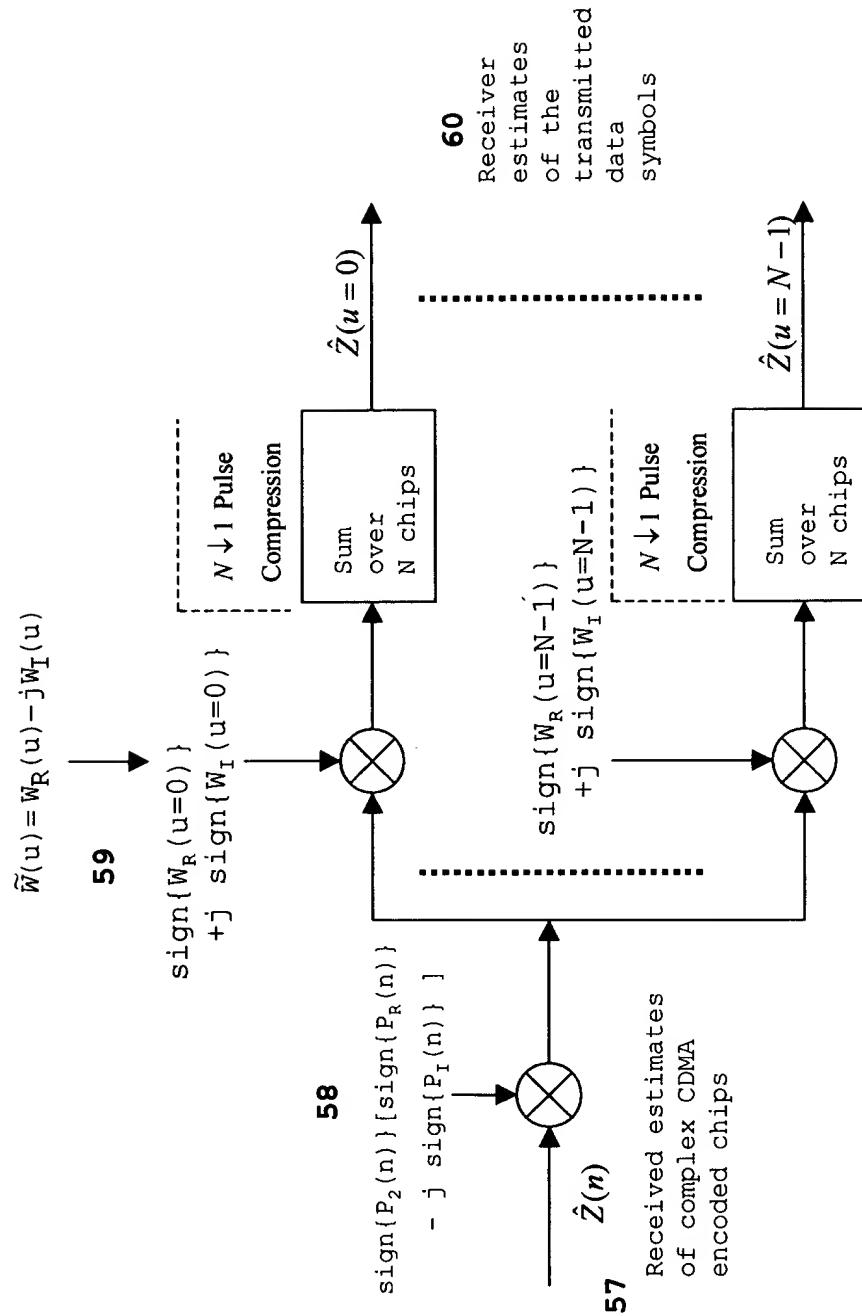




FIG. 7B Hybrid Walsh: Cellular Receiver Implementation

